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What makes online political ads unacceptable? Interrogating public attitudes to inform regulatory responses

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Online political advertising is often portrayed negatively, yet there is limited evidence regarding what exactly the public deems unacceptable. This paper provides new insights into public attitudes based on an online survey conducted in 2022, in which 1881 respondents evaluated political ads placed on Facebook during the 2019 UK General Election. We find that citizens do not inherently view political ads as unacceptable, and that perceptions of acceptability are influenced by partisan and demographic factors. We also find that ads deemed compliant with existing regulatory protocols for non-political advertising are considered more acceptable, suggesting a case for extending the existing regulatory regime to political ads. Delving deeper into our survey data, we explore the drivers behind these perceptions of acceptability and find that concerns about the content and tone of ads play a significant role. These findings provide valuable insights for those seeking to develop codes of conduct to govern practices in this space. Overall, our study offers a nuanced understanding of public attitudes toward online political advertising and identifies possible pathways for regulatory reform.

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Introduction

In recent years, the growth of online political advertising has garnered significant attention. In the United Kingdom, spending on digital advertising increased from 24% to 54% of total advertising spend from the 2015 to the 2019 general elections (Dommett and Power, 2020), signalling a strategic shift toward digital campaigning. This trend continued into the 2024 general election, where digital advertising spending reached unprecedented levels, with political parties spending just under £11 million on Meta and Google between 22nd May and 4th July (Who Targets Me, 2024). Whilst the earlier figures demonstrate the growing dominance of digital platforms over time, the 2024 spending figures underscore the scale and intensity of recent campaign efforts. This surge in online political advertising, along with claims that it can fuel political manipulation, foreign interference and misinformation (Crain and Nadler, 2019; McQuate and Bergh, 2021), has led to calls for either banning this practice (Goldman and Raicu, 2020) or subjecting it to regulation (Furnémont and Kevin, 2020). Responding to these calls, policymakers within the European Union have enacted regulations aimed at enhancing transparency and restricting available targeting parameters (European Commission, 2024). Yet in other jurisdictions, electoral law remains 'in need of substantial reform to deal principally with the shift to digital advertising' (Harker, 2020, p. 151; see also Dommett and Zhu, 2022; Dowling, 2024). To inform these efforts, in this article, we provide new empirical evidence about public attitudes towards online political ads, specifically considering what constitutes publicly unacceptable content. Accordingly, in this paper, we propose two research questions:

1. To what extent does the public find online political ads acceptable?
2. What factors contribute to the unacceptability of online political ads?

By posing these two questions, we aim to provide new insights into public perception of online political ad content and the reasons for varying reactions, offering valuable evidence for policymakers seeking to enact regulation or reforms to tackle unacceptable ads. To generate empirical evidence, we collected data from a large-scale public opinion survey using real-world ads placed during UK elections to examine perceived acceptability. Whilst previous studies have explored the favourability or likeability of online advertising, we follow Kozyreva et al. (2021) in deploying the measure 'acceptability' to move beyond simple measures that assess levels of concern (Electoral Commission, 2022) or public support for bans on online political advertising (Auxier, 2020). Instead, our analysis seeks to reveal and explain variations in perceptions of the acceptability of online political ads. In doing so, our analysis does not focus on individual preferences regarding whether respondents personally like or dislike an advert, but rather on their assessment of whether an advert is considered acceptable within the context of democratic political debate. As such, we argue that our measure is better placed to capture possible public concerns about online advertising, such as dishonesty, manipulation or polarising messaging, that have featured in public debate around the globe.

Exploring explanatory factors derived from respondents' demographic attributes and societal attitudes, we find that age, gender and partisan affiliation play important roles in predicting perceptions of ad acceptability, suggesting that citizens do not have uniform responses to the same stimulus. More importantly, we find that ads perceived as complying with existing regulatory protocols for non-political advertising in the UK are often deemed more acceptable, underscoring the value of extending existing oversight regimes. Further, we identify specific tones and content types within political ads that make them less acceptable, highlighting concerns that could guide stakeholders in advancing codes of conduct—such as those enacted in the Netherlands (International IDEA, 2020) and Germany (Jaursch, 2020).

Cumulatively, our findings pave the way for a more nuanced, evidence-based discussion of online political advertising practice that can inform government regulation, platform policies and campaign practices.

Literature review

In the field of online political advertising, existing research within and beyond academia has predominantly focused on public attitudes toward mechanisms such as online targeting (Ipsos MORI, 2020), algorithmic personalisation (Kozyreva et al., 2021), data privacy (Auxier et al., 2019; Kokolakis, 2017) and automated decision-making by artificial intelligence (Araujo et al., 2020; Lee, 2018). For example, research by the Knight Foundation found that a strong majority of United States respondents did not want internet companies to make personal information available to political campaigns for microtargeting (McCarthy, 2020). Similarly, (Ipsos MORI, 2020, p. 35) in the UK reported that 65% of respondents felt it was unacceptable for a political party to target undecided voters for support. These findings have led to criticism of online political advertising and calls for a ban, with 54% of US respondents agreeing that no political ads should be allowed on social media platforms (Auxier, 2020).

Existing studies therefore suggest that online political ads and the practices that underpin them are viewed with substantial concern by many citizens, with scholars such as Kozyreva et al. (2021) finding that a majority of respondents in the UK, Germany and the US consider personalised political advertising to be unacceptable (Kozyreva et al., 2021; Turow et al., 2012). Given that many online political ads are negative in tone (Rossini et al., 2023), such responses may not be surprising. Yet despite this, we know little about the relationship between the content of specific ads and their perceived acceptability. Much of the extant literature treats online political advertising as an abstract phenomenon, focusing on how people perceive it in abstract terms (i.e. asking how individuals feel about campaigns using their personal data to display political ads online), without examining the particular features that make certain ads appear unacceptable. As a result, there is limited empirical evidence on which aspects of ad content specifically drive these negative evaluations.

This gap is important given the current attention to regulating online political advertising in order to protect democratic processes. Whilst a raft of existing regulation around online content now exists (for example the EU's Digital Services Act) and there is pre-existing regulation around free speech and political advertising in many contexts (Dommett and Zhu, 2022), it is currently unclear whether online political advertising exhibiting certain traits is deemed less acceptable—and whether further regulation is therefore needed to curtail these attributes (i.e. moving to prohibit types of content seen to be universally unacceptable).

In noting this gap, we recognise that research on offline political advertising has employed fine-grained analyses of ad content (Hill, 1989). This work often focused on emotional or individualised responses that reflect personal preferences. For example, Mitchell and Olson (1981) used 5-point scales to assess value judgements, asking whether respondents viewed particular adverts as 'good-bad', 'dislike-like', 'not irritating-irritating', or 'uninteresting-interesting'. Similarly, Hill and Mazis (1986) measured responses along dimensions such as 'pleasant-unpleasant', 'nice-awful', 'insensitive-sensitive' and 'tasteful-tasteless'. Although such studies capture individual preferences, they do not

examine whether those preferences translate into broader assessments of democratic appropriateness or public acceptability. This study seeks to bridge that gap by providing empirical evidence on the specific features of online political ads that the public deems unacceptable, thereby helping to identify where there may be a case for future regulation aimed at countering such perceptions.

Defining acceptability. The term *acceptability* is often referenced in research on online political advertising, yet it is rarely clearly defined in existing literature (Kozyreva et al., 2021; Dommett et al., 2024). In democratic theory, the concept of acceptability is typically grounded in frameworks emphasising core norms such as inclusiveness, effective participation, enlightened understanding and citizen control over the political agenda (Dahl, 1989), as well as the integration of care ethics into political and social structures (Held, 2006). From a communication ethics perspective, acceptability involves assessing content according to ethical principles such as truthfulness and sincerity, which are considered fundamental to meaningful democratic discourse (Christians et al., 2020; Habermas, 2015). From a regulatory standpoint, acceptability relates to formal criteria used to establish responsible and permissible political communication. This includes enhancing advertising transparency, as mandated by the European Commission (2024), which requires political advertisements to be clearly labelled and to provide key information about sponsors and targeting techniques. In the UK context, compliance with core ethical standards, such as ensuring marketing communications are legal, decent, honest and truthful, is essential (ASA CAP Code, n.d).

In contrast to individual preferences, which only capture subjective personal reactions such as liking or disliking an advertisement (Jin et al., 2009; Zeng et al., 2021), the concept of *acceptability* invokes normative judgements about whether specific communication practices should be permitted or restricted within the democratic process. In other words, acceptability is not simply about whether people personally like or dislike an ad, but whether the ad is democratically legitimate and ethically appropriate within broader public discourse.

In this paper, our analytical focus on acceptability rather than general attitudes or personal preferences is particularly useful for policymakers because it allows us to interrogate different factors that may or may not be driving perceived violations of democratic standards. Given heightened concerns about misinformation, polarisation and manipulation in digital campaigns (Crain and Nadler, 2019; McQuate and Bergh, 2021), clarifying the factors that make specific political ads unacceptable is crucial for guiding regulatory frameworks and ensuring democratic resilience.

Hypotheses

Exploring public responses to online political ads, we investigate whether they are deemed acceptable, what drives these responses, which specific attributes of political ads are considered unacceptable, and what potential regulatory solutions are viable. In considering possible explanations for acceptability judgements, we generate three hypotheses shaped by the existing literature on public attitudes and current regulatory debate.

First, we consider the possibility that citizens may dislike political ads in general and are, therefore, likely to judge this form of content as unacceptable. Iyengar and Prior (1999) revealed that political ads were significantly less liked than commercial ads in the US. For example, people generally hold very few positive sentiments towards political advertising, dismissing it as unappealing, untruthful and uninformative. In comparison, commercial ads are perceived as appealing and truthful, though often

lacking in substance. More recently, Pew Research (Auxier, 2020) finds there is widespread support for banning political ads on social media in the United States. Previous research on political advertising in the UK has contended that it is 'the most derided form of political communication', often criticised as 'deliberately anti-rational, designed to play upon our weaknesses as cognitive misers, with a host of devices to elicit a quick and easy emotional response' (Scammell and Langer, 2006, p. 764). In line with these ideas, we expect that political advertising is likely to be viewed more critically than other forms of advertising and may therefore be deemed less acceptable. Given that all ads in our sample are classified by Meta as 'political', this also allows us to assess the extent to which respondents are able to correctly identify political content (Sosnovik and Goga, 2021).

Hypothesis 1: Ads perceived as 'political' are more likely than other ads to be deemed unacceptable.

We also expect that a partisan source will play an important mediating role in shaping perceptions of specific ads. Existing studies have shown a strong presence of partisan motivated reasoning when individuals evaluate political information or make evidence-based judgements in highly partisan contexts (Lavine et al., 2012; Taber and Lodge, 2006). Goal-oriented individuals tend to arrive at conclusions that align with their partisan affiliation. When presented with party cues (e.g. information sponsored by a political party), individuals are found to rely on heuristic cognitive processing, which encourages them to endorse their party's stance (Petersen et al., 2013). Indeed, partisan motivated reasoning has been shown to effectively influence judgements of online content. For example, partisan-consistent news is often perceived as more plausible (Vegetti and Mancosu, 2020). Existing studies, however, have not fully explored how partisan effects shape people's perceptions of the acceptability of online political advertising. One exception is the study by Baum et al. (2021), which demonstrates how partisan self-interest drives attitudes toward the regulation of online targeted political advertising, finding that partisan self-interest plays an important role in predicting support for regulation. This analysis is important because it provides empirical evidence that perceptions of the acceptability of online targeted political advertising are not driven solely by concerns over data privacy but also by beliefs about the partisan advantage that their party can gain. In line with existing research, we hypothesise that the congruence between a respondent's own partisan views and the partisan source of an ad will influence perceived acceptability. Proposing this hypothesis, we expect that respondents are not only reacting to the content of the ad but also following source cues, affecting perceptions of unacceptability.

Hypothesis 2: Ads from a partisan source congruent with a respondent's party affiliation are more likely to be viewed as acceptable than ads from incongruent partisan sources.

Finally, we turn to consider contextual factors that may influence perceptions of acceptability. Rather than relying on pre-existing theory, we explore the extent to which current regulatory principles align with perceptions of acceptability. In the UK, there is an established mechanism for the regulation of non-political advertising, outlined by the Advertising Standards Authority's Committee of Advertising Practice (CAP), which specifies a need for commercial advertising to be 'legal, decent, honest and truthful' (ASA CAP Code Preface[1]). Currently, these principles do not apply to the regulation of political ads, whether online or offline. When considering potential strategies to address perceptions of unacceptability, enforcing these existing regulatory standards could potentially help counteract perceptions of unacceptability and mitigate concerns. To explore this idea, we examine the extent to which ads deemed unacceptable are also perceived as violating pre-existing regulatory standards, hypothesising:

Hypothesis 3: Ads rated lower on the 'legal, decent, honest and truthful' protocol are more likely to be viewed as unacceptable.

In posing these hypotheses, we are also interested in gaining deeper insight into precisely what respondents deem unacceptable. Such analysis is particularly important for attempts to identify the possible focus of a code of conduct. For this reason, we conduct an exploratory analysis that considers four different types of explanation for judgements of unacceptability. First, we examine attitudinal responses, exploring the possibility that a respondent may simply dislike the source, message, or nature of political ads, which in turn affects perceptions of unacceptability. Second, we focus on the potential for ads to be perceived as having 'poor content'. Given the widespread coverage of claims around misinformation in political advertising, as well as concerns about manipulation, harmful or unconstructive messaging and poor argumentation (Crain and Nadler, 2019; McQuate and Bergh, 2021), we investigate whether concerns about content drive perceptions of unacceptability. Third, and relatedly, we explore specific concerns about the emotional tone of online political advertising. Whilst political advertising in general is often associated with negative messaging (Borah et al., 2018), there are particular concerns about the potential for online ads to deploy highly sensationalised emotional tones to elicit responses and drive engagement (Grüning and Schubert, 2022). We therefore explore whether the emotional tone of an advert influences perceptions of unacceptability. Lastly, recognising concerns voiced particularly within the EU context (Lomas, 2021), we consider the potential impact of a lack of transparency on the acceptability of political ads. Specifically, we explore whether the absence of information regarding the ad's source, financial backing, targeting criteria, data sources used for targeting, or content verification plays a role. Through this analysis, we identify the particular attributes of online political advertising that are deemed most unacceptable.

Data and methods

To test our hypotheses, we present one of the first studies examining the UK context, offering new insights beyond the prevailing US-centric narrative. As suggested above, in studying public perceptions of online political advertising, we take a different approach to many pre-existing studies. Rather than asking about this phenomenon in abstract terms, we ask respondents to react to stimuli from real-world online political ads. Specifically, we investigate public attitudes toward political ads placed during the 2019 general election, a period marked by extensive coverage of concerning digital campaigning practices, including a lack of transparency and the spread of misinformation (Dommett and Power, 2020). To the best of our knowledge, this is the first study to examine public attitudes using a large and representative population of ads.

Preregistration. The analysis presented here differs from our planned analysis, as set out in our formal preregistration of hypotheses and data analysis practices (OSF preregistration link: https://osf.io/y9kjg). Preregistration does not mandate that the analysis be conducted and reported exactly as originally planned, but it ensures that the initial plan is documented and accessible, allowing confirmatory and exploratory analyses to be correctly identified as such. When followed, preregistration enables more rigorous tests of statistical significance and provides an opportunity for formal power analysis to ensure that sample sizes are adequate to detect the effect sizes of interest (see Stafford et al., 2020 for an extended discussion on statistical power). In the following analysis, we do not report data from all of our preregistered hypotheses, but instead focus on testing the three main

hypotheses outlined above as most relevant to our research interest. This decision allows us to present an initial report of the findings in the current manuscript, focusing on these three hypotheses and including controls for demographic and social factors.

Stimuli. To generate stimuli, we drew upon the Facebook advertising archive (Edelson et al., 2018). As one of the most dominant social media platforms in the UK, Facebook maintains an extensive political advertising archive. Drawing upon this resource, we used the Ad Library API to filter 'issues, elections or politics' ads using a curated list of political actors. Specifically, we collected ads placed by parties, political leaders and 'satellite campaign groups'[2] (Dommett and Temple, 2018) during the 2019 UK general election, from 6th November to 12th December 2019. This yielded a total of 2506 unique ads[3] placed by our selected accounts. Of these, 1022 ads were placed by 11 political parties, 344 ads by 9 party leaders and 1140 ads by 25 satellite campaigners. Based on the type of Facebook accounts that fielded the ads, we classified all 2506 ads into four categories—Labour source, Conservative source, other party source and satellite source, which included pro-Labour, pro-Conservative, anti-Labour, anti-Conservative and anti-SNP[4] ads, depending on their political motives (see Appendix Table A1 for the names of the advertising accounts).

Procedure. After identifying all ads placed by our selected accounts during this period, we conducted an online survey using Prolific. Compared to other crowdsourcing platforms such as MTurk, Prolific has proven to be able to deliver high-quality data for online behavioural research, offering internally consistent and reliable responses (Peer et al., 2021). We collected data from 1881[5] individuals on 20th August 2022. Eligible participants were UK nationals, aged 18 or older, who had access to tablets or desktop computers to participate in the study. This research was approved by the University of Sheffield Ethics Committee, and informed consent was obtained from all participants. For each respondent, the survey randomly selected four out of the 2506 ads to display. Ads were sampled at random without replacement, ensuring that each respondent saw four unique ads, with no chance of encountering a repeated ad[6]. This process resulted in a total of 7228 responses to our sample of ads. In this article, we focus on reporting ad-level responses, which were calculated by either determining the average response to a single ad or by listing all relevant attributes selected in relation to a specific ad.[7]

The survey began with each participant being shown a screenshot of an ad (see examples in Fig. 1) and instructed to answer eight questions relating to it. This process was repeated three more times, with a new ad shown each time and the same questions asked. It is important to note that we inquired about perceptions of each ad as a whole (e.g. we did not differentiate between text and visuals). Consequently, a potential limitation is that we were unable to isolate which specific part of the ad might be problematic. The survey then proceeded to ask questions about demographics, political affiliation, social trust and views on politics and democracy. In total, there are 48 questions, primarily in the form of multiple choice (see the full questionnaire in Online Appendix 1).

To ensure the quality of responses, we included two attention checks and excluded participants who failed either one ($n = 70$). We also removed participants who were unable to load the ad images ($n = 4$), leaving us with a final sample of 1807 participants who responded to 2375 unique ads (see Appendix Table A2 for the demographic summaries of the survey respondents).

Fig. 1 Examples of screenshots displayed in the survey. This figure presents two screenshots of real political ads placed on Facebook.

Dependent variable. We have chosen to focus on *acceptability* as our dependent variable. Specifically, the survey question asks, 'Do you find the content of this advert acceptable?' with responses ranging from 1 'definitely unacceptable' to 6 'definitely acceptable'. The dependent variable 'acceptability' itself can be interpreted in various ways. It may reflect an individual's personal disposition toward the ad, their belief about whether the ad could be harmful to themselves or others, or their perception of whether the ad is socially acceptable. These alternative interpretations are permissible in our study, as we are interested not only in individual-level responses, such as likability or favourability, but also in broader social responses. By capturing respondents' views of ads at both levels, we adopt this measure and consider a range of individual and societal influences on their responses.

Independent variables. Reflecting our range of pre-registered hypotheses, we include a number of independent variables. *Age* is a continuous variable starting from 18 years. *Gender* is coded as 1 for 'male' and 0 for 'female'. *Partisanship* is measured using the survey question: 'Generally speaking, which one of the following political parties do you most strongly identify with?' Respondents can choose from a list of British political parties or select 'I don't identify with any political party'. *Partisanship strength* is based on the follow-up question: 'How strong a supporter of that party that you think you are?' with responses ranging from 1 'not at all strong' to 7 'very strong'. *Political trust* is aggregated from the variables 'trust in UK parliament', 'trust in the Government', 'trust in political parties', 'trust in the police' and 'trust in the legal system', all coded from 1 'no trust' to 7 'full trust' (Cronbach's $\alpha = 0.85$). *Trust in people* and *Trust in Facebook* are both coded from 1 'no trust' to 7 'full trust'.

Third-person perception (TPP) is calculated in three steps. First, respondents are asked: 'Thinking about the impact of political parties' election messages on *you*, to what extent do you agree or disagree that it helps: to raise your awareness of political issues; raise your awareness of political candidates or parties; prompt you to share messages related to the election; prompt you to vote or register to vote; persuade you to change who you are planning to vote for; and influence how you feel about political opponents'.

Each of these questions is answered on a scale from 1 'strongly disagree' to 7 'strongly agree'. These measures are aggregated to form a scale measuring perceived personal influence of election messages (Cronbach's $\alpha = 0.84$). A second set of identical questions asked about the impact of election messages on t*he typical voter*, which are aggregated to form a scale measuring perceived influence on others (Cronbach's $\alpha = 0.82$). To capture TPP, we calculated the difference between perceived influence on others and perceived influence on oneself.

Whether an ad is seen as *political* is measured by asking: 'Do you think it is clear that this ad is political?' The responses are coded as 1 'yes', 0 'no' and 0 'not sure'. *Ad legality* is measured by asking, 'Would you say this advert was legal?' after showing the ad. Responses are coded from 1 'definitely no' to 6 'definitely yes' and 7 'I can't say'. Similar questions are asked about the ad's *decency*, *honesty* and *truthfulness*.

Representativeness and data weighting. The ages of our respondents range from 18 to 90, with an average age of 43. There are slightly more female participants (54%) than male participants (46%). Our data includes 38.8% Labour supporters, 19.7% Conservative supporters and 23.3% supporters of other parties (including the Liberal Democrats, Scottish National Party, Plaid Cymru, UKIP, Green Party, British National Party and Reform UK). By comparison, in the 2019 General Election, Labour received 32.1% of the vote share, the Conservative party received 43.6%, and other parties received 21.4% (Uberoi et al., 2020). Therefore, it's important to acknowledge that Conservative supporters are underrepresented in our sample. This underrepresentation may be explained by the 'shy Tory' phenomenon, where many Conservative voters do not reveal their true voting intentions to pollsters (Morucci and Symington, 2015). To ensure our sample accurately reflects the broader voting population, we applied post-stratification weights in all regression models based on the actual 2019 General Election results, adjusting Labour supporters down to 32.1%, Conservative supporters up to 43.6%, and supporters of other parties to 21.4%. This weighting corrects for the initial underrepresentation of Conservative voters and thus enhances the representativeness and generalisability of our
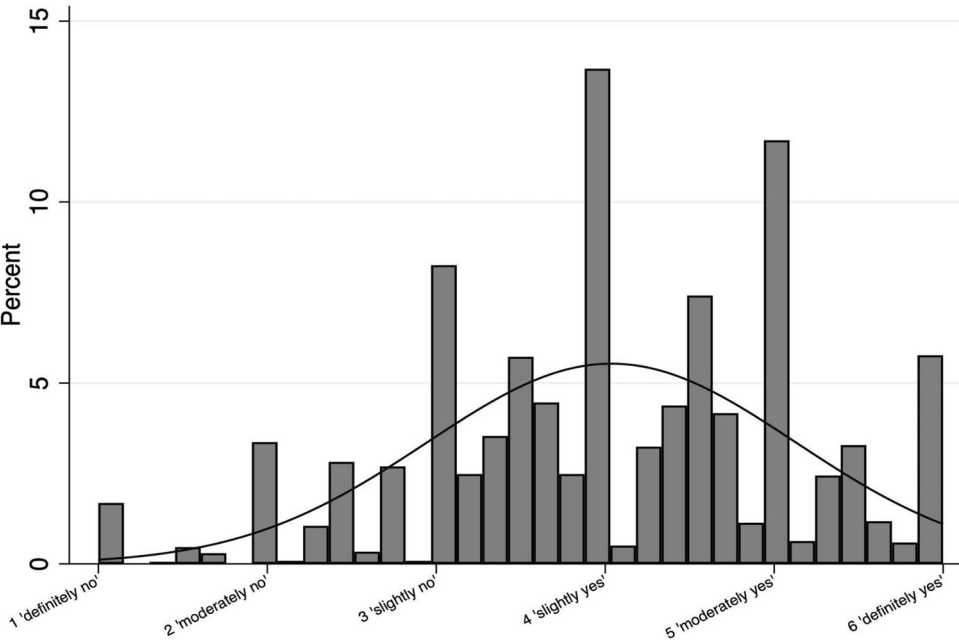
Fig. 2 Ad-level average acceptability rating. This figure displays the average ad-level acceptability scores for 2375 ads.

Table 1 Variation in ad acceptability across ads (weighted model).

	Coefficient	Std. error	95% CI (lower)	95% CI (upper)
Fixed effect				
Intercept (overall mean acceptability)	4.028	0.021	3.987	4.068
Random effects				
Ad-level variance	0.266	0.030	0.214	0.331
Residual variance	2.137	0.042	2.057	2.221
ICC	0.111	0.012	0.090	0.136

The regression model was estimated using post-stratification weights based on the 2019 General Election to ensure population representativeness.

findings to the national electorate. However, for simplicity and transparency in describing our sample characteristics, we report descriptive statistics and summary data using the original, unweighted sample. This approach provides a clear view of the data as collected, before adjustments for representativeness were made.

Results

To address our first research question, we begin by examining respondents' views on the acceptability of online political ads from the 2019 general election. Assessing ad-level acceptability, we find that the average acceptability score is 4.04 on a 1–6 scale, indicating that, on average, our pool of ads is considered 'slightly acceptable' (see Fig. 2). Specifically, within our dataset, 1596 out of 2375 ads were, on average, judged to be acceptable. However, our data also reveals variations in perceptions of ad acceptability. Only 137 ads were deemed 'definitely acceptable' by all viewers, whilst just 40 ads were deemed 'definitely unacceptable'.

To assess whether perceived acceptability varied systematically across individual ads, we estimated a simple mixed-effects model with a random intercept for each ad ($n = 2375$). The results show that ads differ in how acceptable they were rated: the ad-level variance was 0.266, while the residual variance was 2.137 (see Table 1). This indicates that ~11.1% of the total variance in acceptability is attributable to differences between ads, suggesting that some ads were consistently rated as more or less acceptable than others. However, this proportion of variance is modest,

Table 2 Ad-level acceptability score based on ad sources and respondents' party affiliation.

Ad source	Number of unique ads	Average acceptability score
Labour source	231	4.61
Conservative source	557	3.70
Other party source	500	4.47
Satellite source (Pro-Labour)	282	4.18
Satellite source (Pro-Conservative)	32	3.42
Satellite source (Anti-Labour)	214	3.49
Satellite source (Anti-Conservative)	555	3.93
Satellite source (Anti-SNP)	4	3.68
Total	2375	4.04

indicating that most differences in acceptability are likely shaped by individual-level factors or ad-respondent interactions.

Analysing the ads based on their sources (see Table 2), we find that, on a scale of 1 to 6, ads placed by the Labour Party received the highest score of 4.61, suggesting that Labour ads are generally considered moderately acceptable. In contrast, ads placed by the Conservatives received the lowest score of 3.70, meaning their ads

Table 3 Mixed-effects regression predicting ad acceptability (weighted model).

Fixed effects	coefficient
Labour ads × Conservative supporters	−0.467** (0.146)
Conservative ads × Labour supporters	−1.127*** (0.096)
Other party ads × partisan	−0.080 (0.101)
Partisan respondent (vs. non-partisan)	0.162* (0.081)
Labour ads	0.893*** (0.059)
Conservative ads	0.435*** (0.065)
Other party ads	0.700*** (0.091)
Labour supporters	0.426*** (0.065)
Conservative supporters	−0.010 (0.078)
Constant	3.518*** (0.065)
Random effects	
Variance (ResponseID Intercept)	0.677*** (0.036)
Residual variance	1.566*** (0.040)

The regression model was estimated using post-stratification weights based on the 2019 General Election to ensure population representativeness. Cells represent unstandardised coefficients and robust standard errors of linear regression models for independent variables toward ad acceptability. Standard errors are clustered at the level of the respondent.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

Table 4 Multilevel mixed-effects model of repeated measures of ad judgements nested within individual respondents.

	Mixed-effects modelling
Ads being clearly 'political'	0.098* (0.045)
Regulatory norms	
Legal	0.137*** (0.015)
Decent	0.456*** (0.018)
Honest	0.156*** (0.024)
Truthful	0.193*** (0.025)
Party supporters and party sources	
Conservative supporters × Conservative ad source	0.308** (0.090)
Labour supporters × Labour ad source	−0.063 (0.084)
Conservative supporters × Labour ad source	−0.050 (0.110)
Labour supporters × Conservative ad source	−0.061 (0.082)
Conservative supporters × Pro-Conservative Satellite	−0.203 (0.210)
Conservative supporters × Anti-Labour Satellite	0.073 (0.125)
Labour supporters × Pro-Labour Satellite	0.011 (0.082)
Labour supporters × Anti-Conservative Satellite	0.049 (0.069)
Conservative supporters × Anti-Conservative Satellite	−0.015 (0.085)
Conservative supporters × Pro-Labour Satellite	−0.089 (0.101)
Labour supporters × Anti-Labour Satellite	0.018 (0.099)
Labour supporters × Pro-Conservative Satellite	0.123 (0.199)
Conservative ad source	−0.166* (0.067)
Labour ad source	0.067 (0.072)
Satellite ad source (Anti-Labour)	−0.238** (0.079)
Satellite ad source (Anti-Conservative)	−0.075 (0.057)
Satellite ad source (Pro-Labour)	0.030 (0.066)
Satellite ad source (Pro-Conservative)	−0.259 (0.150)
Conservative supporters	−0.061 (0.066)
Labour supporters	0.063 (0.054)
Partisanship strength	0.012 (0.012)
Controls	
Age	−0.005*** (0.001)
Gender	0.103*** (0.028)
Education	−0.009 (0.017)
Minority	0.008 (0.007)
Trust in people	0.001 (0.014)
Political trust	−0.012 (0.014)
Trust in Facebook	0.004 (0.012)
Third-person perception	−0.006 (0.003)
Party knowledge	−0.009 (0.015)
Democracy	−0.002 (0.012)
Constant	0.544*** (0.130)
Random effects parameters	
Variance (ResponseID Intercept)	0.134*** (0.016)
Residual Variance	0.430*** (0.018)

Cells represent unstandardised coefficients and robust standard errors of linear regression models for independent variables toward ad acceptability. Standard errors are clustered at the level of the respondent.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

are considered only slightly acceptable on average. Ads placed by other parties (i.e. Liberal Democrats, SNP, Plaid Cymru, UKIP, Green Party, British National Party, Reform UK and others) received a score of 4.47, placing them between slightly acceptable and moderately acceptable. We also examined ads from partisan-leaning non-party campaign groups, which we term satellite campaign groups (Dommett and Temple, 2018). Amongst these, ads placed by pro-Labour accounts received the highest acceptability score of 4.18, whilst ads from pro-Conservative accounts received the lowest score of 3.42.

To assess whether the higher acceptability of Labour ads was simply due to sample composition and to test for partisan bias in ad evaluations, we estimated a weighted mixed-effects model including ad source, party affiliation and their interactions (see Table 3). The results show that Labour ads were rated significantly more acceptable than other types ($\beta = 0.893$, $p < 0.001$), even after controlling for political affiliation and applying post-stratification weights, suggesting that this pattern is not due to the overrepresentation of Labour supporters.

Incidentally, this finding also speaks to and offers preliminary support for Hypothesis 2 (which we will test more fully in Table 4) that respondents evaluate ads more positively when the ad source aligns with their own party affiliation, and more negatively when it comes from an opposing party. Labour voters rated Conservative ads significantly less acceptable than other respondents ($\beta = -1.127$, $p < 0.001$), and Conservative voters gave lower ratings to Labour ads ($\beta = -0.467$, $p = 0.001$). These partisan asymmetries provide clear evidence of incongruent-source effects. At the same time, ads from partisan sources received higher overall ratings from respondents whose affiliations were not opposed, suggesting more favourable responses in congruent or neutral contexts. In contrast, non-partisan respondents (used as the reference group in our broader comparison) did not exhibit strong directional bias, and their interaction with other party sources was not statistically significant. These findings suggest that both ad content and partisan identity shape perceived acceptability, particularly through negative evaluations of messages from opposing parties (further analysis in Table 4).

Our initial findings reveal some variation in how ads are viewed. However, overall, we find a relatively high level of acceptability for the online political ads in our sample. This may

be reassuring to regulators, as it suggests that much of the current practice is deemed acceptable. Nevertheless, the ongoing interest in regulation makes it important to explore the factors driving this variation and to consider potential responses.

In the following section, we address our second research question regarding the factors contributing to the unacceptability
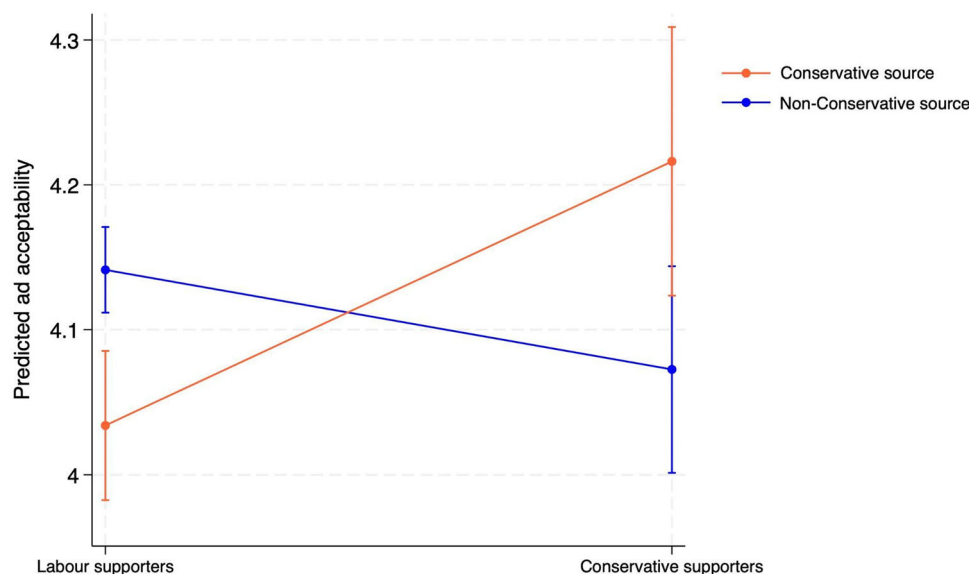
Fig. 3 Predicted values of ad acceptability by supporter group and ad source with 95% CIs. This figure shows the predicted values of ad acceptability by supporter group (Labour vs. Conservative) and ad source (Conservative vs. non-Conservative), with 95% confidence intervals.

of online political ads, focusing on how ad-specific features influence their acceptability. Ads are the unit of analysis because each ad's evaluation is the focus of the study. By using a mixed-effects model, we account for the fact that judgements are nested within individuals, allowing us to control for individual differences while focusing on how the ads' characteristics influence the outcome.

The model involves repeated measures, where each respondent evaluates multiple ads. Since these ad evaluations are nested within individuals, the multilevel structure allows us to model both ad-level and respondent-level effects. This reflects the fact that different respondents may have different baseline acceptability levels, but the ads themselves still vary in how acceptable they are perceived.

To test whether an ad being perceived as 'political' affects its acceptability (H1), we first examined whether our ads were perceived as political. Interestingly, our sample only included ads classified by Meta as political, yet there was still variation in whether they were perceived as political (Sosnovik and Goga, 2021). Out of our 2375 ads, 58 (2.4%) were rated by all viewers as either not clearly political or as uncertain whether they were political, while 467 (19.7%) ads were rated by at least one viewer as either not clearly political or uncertain whether they were political. Given that all ads were obtained from the Facebook Ad Library, where they were categorised under 'Issues, elections or politics', this raises questions about how well Facebook's classification aligns with a commonly accepted definition of online political advertising (Crain and Nadler, 2019; Le Pochat et al., 2022; Sosnovik and Goga, 2021). It also highlights the challenges of defining and identifying political ads (Dommett and Zhu, 2023). In a multilevel regression analysis (Table 4), we find that ads deemed 'clearly political' were more likely to be judged as acceptable compared to those viewed as 'not political' or 'not sure about being political'. The relationship is statistically significant (direct effect = 0.098, $p = 0.031$), supporting our first hypothesis. This result suggests that people do not view *political* ads as inherently more unacceptable or problematic than non-political ads. On the contrary, they tend to find them more acceptable than non-political ads.

This more comprehensive mixed-effects model allowed us to reassess Hypothesis 2 by revisiting the relative effect of partisan

motivated reasoning. Specifically, we tested the interaction between participants' partisan identification and the partisan source of the ad, whilst controlling for both ad-level and individual-level factors. This approach allowed us to examine how partisan respondents view an ad from a congruent or incongruent partisan source. In Table 4, we find that Conservative supporters are significantly more likely than others to agree that an ad placed by the Conservative party is acceptable. Other interactions between party support and ad source are not statistically significant in this model. These findings provide partial support for Hypothesis 2, although suggesting that the interaction between party support and ad source may not be as clear once variation across ads and individuals, such as perceptions of legality, decency, honesty and truthfulness, is accounted for within the model.

As shown earlier in Table 3, there are significant effects between Conservative/Labour supporters and Conservative ad sources. To further explore the partisan effect on ad acceptability and to isolate this from the influence of other covariates, we produced a marginal effects plot to illustrate the interactions (see Fig. 3). The plot shows the predicted values of ad acceptability by supporter group (Labour vs. Conservative) and ad source (Conservative vs. non-Conservative). We find that Labour supporters view ads not sourced from Conservatives as more acceptable, while Conservative supporters find Conservative-sourced ads more acceptable than ads from non-Conservative sources. This suggests that the effect of the ad source on acceptability depends on whether the respondent is a Labour or Conservative supporter. The confidence intervals for Labour and Conservative supporters do not overlap for Conservative-sourced ads, indicating that the differences in ad acceptability between the two groups are statistically significant. There is a clear interaction effect, meaning that the acceptability of an ad depends significantly on the combination of the respondent's party affiliation and the ad's source.

Next, we consider the extent to which perceptions of violations of existing regulatory norms correlate with perceptions of acceptability. To do this, we assess the degree to which the perception that an ad violates existing regulatory standards informs perceptions of acceptability (H3). For each ad, respondents were asked to rate how well they believed the ad aligned with
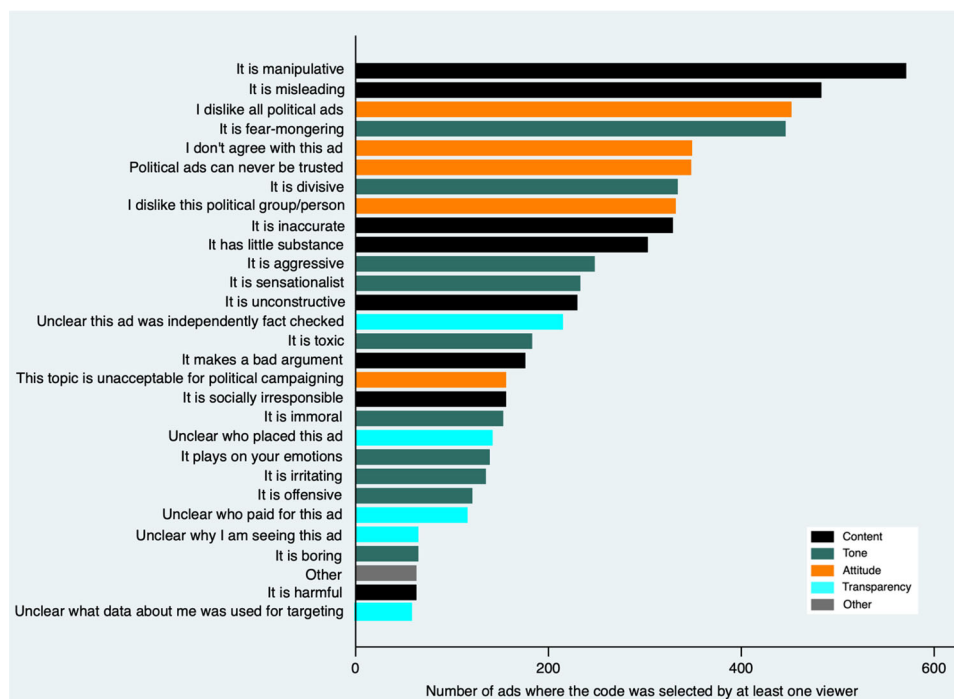
Fig. 4 Reasons why people find the ads unacceptable: ad-level analysis. This figure illustrates the reasons why people find online political ads unacceptable.

regulatory standards (legal, decent, honest and truthful) applied to non-political advertising. As shown in Table 4, ads perceived more positively as legal, decent, honest and truthful were significantly more likely to be considered acceptable than those not strongly exhibiting these attributes, all else being equal. Notably, decency had the strongest effect on the ads' acceptability rating (direct effect = 0.456, $p < 0.001$), providing strong support for H3. The effects of regulatory norms are robust and significant, suggesting that there may be value in extending existing regulatory norms, as enforcement of these standards appears to make online political ads appear more acceptable.

For the control variables, we find that older people are less accepting of ads compared to younger people (direct effect = −0.005, $p < 0.001$), reinforcing previous work by Turow et al. (2012). Additionally, we find that gender plays an important role in predicting ad acceptability, with men being more likely than women to find online political ads acceptable. This finding aligns with prior research in the US (Gibson et al., 2024). We do not find that educational attainment, minority status, social or political trust, third-person effect, knowledge of party politics, or the value placed on living in a democracy have a statistically significant effect on perceptions of ad acceptability.

The estimated random intercept variance of 0.134 indicates moderate variability across respondents in their baseline level of ad acceptability, independent of the fixed predictors in the model. This variability reflects unobserved, respondent-specific differences in general ad receptiveness. The residual variance of 0.430 represents the amount of variability in ad acceptability that remains unexplained after accounting for both fixed effects and respondent-level random effects. Given that the residual variance is substantially larger than the intercept variance, this suggests considerable unexplained variability at the observation level, likely due to ad-specific characteristics or interactions between respondents and specific ads. Such residual variation is expected in designs where individuals rate multiple, randomly selected stimuli. Nevertheless, the inclusion of respondent-level random intercepts and key covariates ensures that systematic individual-

level differences are adequately captured. The intraclass correlation coefficient (ICC) of 0.238 confirms that ~23.8% of the total variance in acceptability is attributable to differences between respondents.

Ad-level characteristics accounting for unacceptability. Having considered the drivers of acceptability judgements, we now turn to explore in more detail why people judged certain ads to be unacceptable. In our survey, when respondents indicated that they believed an ad was unacceptable, they were asked to select the top three reasons from a list of 28 options (plus a free text option).[8] For our analysis, we classified these 28 items into four categories to explain unacceptability: attitude, content, tone and transparency. In reporting this data, we focus on the codes assigned to individual ads. It is important to note that respondents could only select up to three codes, meaning these figures represent the most important reasons selected by respondents, rather than all possible factors that contributed to their judgement.

Out of the 2375 unique ads analysed, we found that 1507 (63.5%) were deemed unacceptable by at least one viewer. Therefore, our analysis focuses on these 1507 ads. When examining the prominence of our four categories, we found that content issues were the most frequently cited reason for unacceptability (Fig. 4). Of the 1507 unacceptable ads, 1177 (78.1%) exhibited at least one content problem, 1063 (70.5%) exhibited at least one tone problem, 969 (64.3%) exhibited at least one attitude problem, 442 (29.3%) exhibited at least one transparency problem and 63 (4.2%) exhibited other unacceptable reasons.

Looking at the specific explanations under the *content* category, we find that 571 (37.9%) of the unacceptable ads were indicated by at least one viewer as being 'manipulative', and 483 (32.1%) were considered 'misleading', making these the most commonly selected reasons overall. The least cited reason under *content* was concerns about harmful ad content (4.2%). For *tone*, we find that

the top two reasons selected were 'fear-mongering' (29.6%) and 'divisive' (22.2%), which ranked the fourth and seventh most cited reasons amongst all. We also observed that *attitude* was commonly selected, accounting for the third, fifth, sixth and eighth most common reasons which were 'I dislike all political ads' (30.0%), 'I don't agree with this advert' (23.2%), 'political ads can never be trusted' (23.1%) and 'I dislike this political group/person' (22.0%). Interestingly, *transparency* issues did not appear in the top 10 most selected reasons, with only 442 (29.3%) ads flagged for transparency concerns, suggesting this is not the public's most prominent concern.

It is worth noting that we do not claim, nor do we expect, this list of 28 reasons across four categories to be completely exhaustive in accounting for ad unacceptability. Acknowledging this concern, we provided a free text box labelled 'Other', allowing respondents to give reasons for selecting unacceptability that were not already listed. In total, 63 ads were identified as unacceptable for 'Other' reasons, with 39 text entries providing elaboration (see details in Online Appendix 2). Given that responses under 'Other' constitute only 4.2% of unacceptable ads and the content does not form a distinct reason or category, we can be confident that our designed metrics are robust in terms of validity and comprehensiveness.

Although not reported here, as our focus is on unacceptability, we also analysed responses from individuals who found ads acceptable (see Appendix Table A3). We observed that *attitude* (75.2%) and *content* (73.6%) were the most frequently cited reasons for acceptability. However, *transparency* (66.1%) and *tone* (65%) were also commonly selected. The finding on transparency is particularly notable, as this reason was rarely selected to explain unacceptability. This suggests that transparency may play a significant role in driving perceptions of acceptability, even if it does not strongly influence perceptions of unacceptability.

Discussion

As one of the first studies to explore public perceptions of online political advertising, our paper makes an important contribution to the literature by examining perceptions of online political ads in a way that goes beyond assessments of this activity as a general phenomenon or personal feelings about specific pieces of content. Contrary to prevailing narratives, which often highlight the problematic nature of political ads, our findings suggest that, in general, responses to online political ads did not indicate that they were deemed unacceptable. Interrogating the reasons behind these judgements of acceptability, we found that the most commonly selected reason was that 'this topic is acceptable for political campaigning' (see Appendix Table A3). This finding provides an important counterpoint to the existing narrative surrounding online political advertising, suggesting that online political ads are being used in ways broadly perceived as acceptable by the public. This reflects an important difference in question formulation, with greater concern about online political ads as an abstract concept compared to real-world examples. This is a positive finding for campaigners, indicating that calls to ban online political advertising may risk outlawing a form of communication that respondents view as acceptable.

Our findings were more mixed with regard to partisan source cues. We found partial evidence to support the established theory of opinion formation based on partisan motivated reasoning (Bolsen et al., 2014; Taber and Lodge, 2006). Specifically, our findings show that the source of a political ad has an impact on perceptions of online political advertising acceptability (see also Baum et al., 2021). Ambiguities in the data may result from respondents not fully recognising the source of an advert—a factor we did not investigate—or if they may have focused more

on the ad's content and made assumptions about its source, rather than noticing the source directly. Unfortunately, our data do not allow us to explore these possibilities, leaving important questions for future research. This also makes it challenging to develop universally supported regulatory interventions. Because partisan identification appears to affect judgements of acceptability to some degree, it will be challenging to identify universally perceived forms of problematic content, preventing the development of regulations able to counter this perception across all viewers.

Expanding on this analysis, we also considered whether perceptions of violations of current regulatory standards affected perceptions of acceptability. Our findings revealed that ads appearing to contravene existing regulatory standards (being legal, decent, truthful and honest) were more likely to be deemed unacceptable. This supports the idea of extending existing regulatory oversight to include online political ads, adding weight to calls for applying the system of commercial advertising oversight to the regulation of online political ads.

In addition, we engaged with proposals to establish a code of conduct, conducting an exploratory analysis to determine whether particular common attributes of unacceptable ads emerged that could be targeted by such action. Exploring four possible factors, we found that the content of political ads, and specifically perceptions of 'manipulative' or 'misleading' content, often accounted for this response. Explanations classified as tone and attitude were also commonly selected, with ads described as unacceptable because they were 'fear-mongering' and 'divisive'. These findings suggest that the attributes of an ad can have implications for acceptability, suggesting the possibility of designing codes of conduct that seek to mitigate unacceptable practices. In recommending such as response, our findings are particularly interesting as they suggest that such codes should not focus solely on efforts to maximise transparency—in line with much recent activity (European Commission, 2024)—but should also address the question of how to avoid creating manipulative, misleading, or inaccurate ads with emotive, fear-mongering or divisive content. This is not to say that transparency efforts by governments and platforms are erroneous. It was notable within respondents' explanations for ad acceptability that transparency featured highly as a reason for an advert being deemed acceptable (with two of the transparency items—'It is clear who placed this advert' and 'It is clear who paid for this advert'—making the top 3 most cited reasons for ad acceptability). This suggests that transparency can drive positive perceptions of ads and is therefore an important consideration. It is possible that our findings reflect the framing of the survey, and hence this result should be tested in future work. However, this evidence could suggest that transparency alone will be insufficient in efforts to mitigate perceptions of unacceptable practices.

In summary, our findings cumulatively suggest that the task of regulating the content of online political advertising is by no means straightforward. Whilst in the UK, an extension of existing regulatory norms offers one route forward, the relevance of partisan and demographic factors suggests that reaching a consensus on acceptable practices will be challenging as individual responses and objective judgements appear to interplay. Indeed, our findings around the (uneven) impact of partisan identification suggest there may be little regulators can do to increase acceptability if the respondent simply dislikes the political group or person, or if they simply do not trust political ads. As such, our findings suggest that regulators may not be able to eradicate the perception that an ad is unacceptable, but that the promotion of certain standards (i.e. that ads are legal, decent, honest and truthful, or are not being manipulative or misleading) may help to improve perceptions of acceptability.

Looking beyond our case to consider the extent to which our findings can be generalised, our analysis focused on a specific regulatory context and the resonance of a particular regulatory framework within the UK. However, the methodological approach we advance—focusing on responses to specific ads—can be useful for investigating attitudes toward online political advertising across various contexts. We expect that demographic factors and pre-existing partisan attitudes will influence perceptions of online ads in other electoral systems, such as presidential democracies. However, it remains unclear whether the reasons for ad acceptability will remain consistent or whether regulatory principles in other contexts correlate with perceptions of acceptability, suggesting the need for further research.

Limitations. Our findings need to be interpreted with certain limitations in mind. In this study, we exclusively analysed election period ads from the Facebook ad library. Whilst Facebook is currently the most dominant social media platform for advertisers, it is possible that political advertising on other platforms or outside the election period might employ different strategies. Therefore, user perceptions could differ depending on the context.

The Facebook ad archive also has its own limitations. For example, scholars find that Facebook's current enforcement lacks precision, with a considerable portion of political ads not being captured by the platform and therefore not categorised under 'ads about social issues, elections or politics', whilst non-political ads may accidentally be included (Le Pochat et al., 2022; Sosnovik and Goga, 2021). For our study, we could only utilise the ads being identified and archived in the ad library. It is outside the scope of our study to analyse political ads that were disseminated on Facebook but evaded the platform's detection. Additionally, our analysis does not address ad targeting criteria, meaning we do not distinguish between personalised and non-personalised ads, which involve using personal data to deliver targeted political advertisements (Zuiderveen Borgesius et al., 2018).

Methodologically, we utilised random selection from the population of ads to ensure that each respondent viewed four unique ads and that each ad was rated an average of three times by different viewers. This method ensured that each respondent had the same number of tasks and that each ad from the population was evaluated more or less equally. However, it is worth noting that algorithmic personalisation and targeting techniques, which are widely used in online advertising practices, can result in vastly different online experiences for users depending on their sociodemographics and the electoral competitiveness in their constituency. For example, a Conservative supporter might see a different set of ads on their Facebook feed compared to a Labour supporter. We acknowledge that the random nature of the exposure that we imposed may not reflect a user's real-life experience, which may compromise the external validity of this study to some extent.

Finally, our study used a single measure of 'acceptability' to gauge citizen attitudes. However, this single-item measure may lead to varying interpretations of 'acceptability', potentially overlooking complexities in respondents' attitudes and reactions to ads, which could result in some ambiguity in the interpretation of our findings. Future studies should consider developing multi-item measures to capture the nuances of 'acceptability' more effectively and ensure greater internal validity and consistency in the results. In-depth interviews could also be used alongside future surveys to interrogate respondents' understanding of this idea.

Conclusion

This article examines public attitudes toward online political advertising in detail, seeking to identify factors that render this form of political advertising unacceptable. Contrary to many prevailing narratives, our analysis reveals that online political ads are often deemed acceptable. However, perceptions vary depending on respondents' partisan and demographic affiliations, and often reflect perceived violations of existing standards for the regulation of non-political advertising. Our findings suggest the potential value of extending existing regulatory principles to online political advertising, but indicate that any reform is unlikely to produce uniform perceptions of acceptability because of these partisan and demographic influences on judgements of individual ads. We also show that judgements of unacceptability are often attributed to content-related issues, such as perceived manipulation, misleading information, fear-mongering and divisiveness. These findings suggest that those seeking to develop a code of conduct may wish to prioritise addressing these types of content. Our findings offer empirical evidence for ongoing debates about regulatory policies concerning online political advertising, showing a variety of influences to affect judgements of unacceptability. For those developing regulatory responses, this indicates that no single intervention will act as a panacea, raising questions about the capacity of many efforts to boost transparency to deliver improved outcomes in this regard.

Notes

1 See: https://www.asa.org.uk/type/non_broadcast/code_folder/preface.html
2 These groups were identified from records maintained by the UK Electoral Commission, including a list of registered political parties and non-party campaigners who 'campaign in the run up to elections but do not stand as political parties or candidates' (Electoral Commission ND).
3 All the URLs of the ads are saved in a repository that will be released upon publication.
4 We do not analyse 'anti-SNP' data in the paper. These headings captured the full spectrum of positions held by our selected groups, meaning we did not, for example, observe pro- or anti-Green Party groups in our sample.
5 Each participant was assigned four ads. Ads were sampled at random without replacement from a total of 2506 ads. Due to random variation, some ads would be seen 0 times, while others would be seen multiple times. Assuming the average ad viewership is 3, we determined our sample size by calculating $n = 2506 \times 3 / 4 = 1880$.
6 After checking the data, we can confirm that all respondents in our analysis were shown four unique ads. The average viewership per ad was 3.04. The number of views per ad ranged from a minimum of 1 to a maximum of 9, with most ads receiving between 1 and 4 views.
7 In taking this approach, we highlight the fact that each ad could potentially be rated a different number of times, and therefore the average figure was not calculated from a consistent number of responses.
8 Respondents were also asked to select from a similar list of 'acceptable' reasons if they indicated that the ad was acceptable.

References

Araujo T, Helberger N, Kruikemeier S, De Vreese CH (2020) In AI we trust? Perceptions about automated decision-making by artificial intelligence. AI Soc 35:611–623
ASA CAP Code (n. d) 01 Compliance. https://www.asa.org.uk/type/non_broadcast/code_section/01.html#:~:text=Principle,the%20letter%2C%20of%20the%20Code
Auxier B (2020) 54% of Americans say social media companies shouldn't allow any political ads. Pew Research. https://www.pewresearch.org/fact-tank/2020/09/

24/54-of-americans-say-social-media-companies-shouldnt-allow-any-political-ads/

Auxier B, Rainie L, Anderson M, Perrin A, Kumar M, Turner E (2019) Americans and Privacy: concerned, confused and feeling lack of control over their personal information. Pew Research Center: Internet, Science & Technology. https://policycommons.net/artifacts/616499/americans-and-privacy/1597152/

Baum K, Meissner S, Krasnova H (2021) Partisan self-interest is an important driver for people's support for the regulation of targeted political advertising. PLoS ONE 16(5):e0250506

Bolsen T, Druckman JN, Cook FL (2014) The influence of partisan motivated reasoning on public opinion. Political Behav 36(2):235–262

Borah P, Fowler E, Ridout TN (2018) Television vs. YouTube: political advertising in the 2012 presidential election. J Inf Technol Politics 15(3):230–244

Christians CG, Fackler M, Richardson KB, Kreshel PJ (2020) Media ethics: cases and moral reasoning. New York and London: Routledge

Crain M, Nadler A (2019) Political manipulation and internet advertising infrastructure. J Inf Policy 9:370–410

Dahl RA (1989) Democracy and its critics. New Haven and London: Yale University Press

Dommett K, Power S (2020) Democracy in the Dark: digital campaigning in the 2019 general election and beyond. Electoral Reform Society. https://www.electoral-reform.org.uk/latest-news-and-research/publications/democracy-in-the-dark-digital-campaigning-in-the-2019-general-election-and-beyond/

Dommett K, Temple L (2018) Digital campaigning: the rise of Facebook and satellite campaigns. Parliam Aff 71(suppl_1):189–202

Dommett K, Zhu J (2022) The barriers to regulating the online world: Insights from UK debates on online political advertising. Policy Internet 14(4):772–787

Dommett K, Zhu J (2023) What is an online political advert? An interrogation of conceptual challenges in the formation of digital policy response. Policy Internet 15(4):713–730

Dommett K, Mensah SA, Zhu J, Stafford T (2024) Understanding the communicative strategies used in online political advertising and how the public views them. Br J Politics Int Relat 00(0):1–33

Dowling ME (2024) Mitigating microtargeting: political microtargeting law in Australia and New Zealand. Regul Gov 18:987–999

Edelson L, Sakhuja S, McCoy D (2018) An analysis of Facebook's archive of ads with political content. Unpublished manuscript. http://bork.cs.fau.de/CCC/35C3/slides-pdf/35c3-9419-explaining_online_us_political_advertising.pdf

Electoral Commission (2022) Public Opinion Tracker. https://www.electoralcommission.org.uk/who-we-are-and-what-we-do/our-views-and-research/our-research/public-attitudes

European Commission (2024) Regulation of the European Parliament and of the Council on the transparency and targeting of political advertising. https://data.consilium.europa.eu/doc/document/PE-90-2023-INIT/en/pdf

Furnémont J-F, Kevin D (2020) Regulation of political advertising: a comparative study with reflections on the situation in South-East Europe. https://rm.coe.int/study-on-political-advertising-eng-final/1680a0c6e0

Gibson R, Bon E, Dommett K (2024) "I always feel like somebody's watching me": what do the US electorate know about political micro-targeting and how much do they care? J Quant Descr Digit Media 4:1–70

Goldman E, Raicu I (2020) Why social media companies should renew their bans on political ads. https://www.scu.edu/ethics/internet-ethics-blog/why-social-media-companies-should-renew-their-bans-on-political-ads/

Grüning DJ, Schubert TW (2022) Emotional campaigning in politics: being moved and anger in political ads motivate to support candidate and party. Front Psychol 12:781851

Habermas J (2015) Between facts and norms: contributions to a discourse theory of law and democracy. John Wiley & Sons, Cambridge, United Kingdom: Polity Press

Harker M (2020) Political advertising revisited: digital campaigning and protecting democratic discourse. Leg Stud 40(1):151–171

Held D (2006) Models of democracy. Cambridge, United Kingdom: Polity Press

Hill RP (1989) An exploration of voter responses to political advertisements. J Advert 18(4):14–22

Hill RP, Mazis MB (1986) Measuring emotional responses to advertising. In: Lutz RJ (ed) Advances in consumer research, Vol 13. Association for Consumer Research: Provo, UT, p 164–169

International IDEA (2020) Dutch code of conduct transparency online political advertisements. https://www.idea.int/news-media/news/first-national-code-conduct-online-political-advertising-european-union-signed-dutch

Ipsos MORI (2020) Public attitudes towards online targeting—a report by Ipsos MORI for the Centre for Data Ethics and Innovation and Sciencewise. Research report, Ipsos MORI. London, England

Iyengar S, Prior M (1999) Political advertising: What effect on commercial advertisers? https://web.stanford.edu/~siyengar/research/papers/advertising.html

Jaursch J (2020) Rules for fair digital campaigning. https://www.stiftung-nv.de/sites/default/files/rules_for_fair_digital_campaigning.pdf

Jin HS, An S, Simon T (2009) Beliefs of and attitudes toward political advertising: an exploratory investigation. Psychol Mark 26(6):551–568

Kokolakis S (2017) Privacy attitudes and privacy behaviour: a review of current research on the privacy paradox phenomenon. Comput Secur 64:122–134

Kozyreva A, Lorenz-Spreen P, Hertwig R, Lewandowsky S, Herzog SM (2021) Public attitudes towards algorithmic personalization and use of personal data online: evidence from Germany, Great Britain, and the United States. Humanit Soc Sci Commun 8(1):1–11

Lavine HG, Johnston CD, Steenbergen MR (2012) The ambivalent partisan: How critical loyalty promotes democracy. Oxford University Press, USA

Le Pochat V, Edelson L, Van Goethem T, Joosen W, McCoy D, Lauinder T (2022) An audit of Facebook's political ad policy enforcement. In: Proceedings of the 31st USENIX Security Symposium. 10–12 August 2022, Boston, MA, USA, 978-1-939133-31-1. https://www.usenix.org/system/files/sec22-lepochat.pdf

Lee MK (2018) Understanding perception of algorithmic decisions: fairness, trust, and emotion in response to algorithmic management. Big Data Soc 5(1). https://doi.org/10.1177/2053951718756684

Lomas N (2021) Europe offers tepid set of political ads transparency rules. Tech Crunch. https://tcrn.ch/3r9TTgU

McCarthy J (2020) In U.S., most oppose micro-targeting in online political ads. Knight Foundation. https://knightfoundation.org/articles/in-us-most-oppose-micro-targeting-in-online-political-ads/

McQuate S, Bergh R (2021) Political ads during the 2020 presidential election cycle collected personal information and spread misleading information. https://www.washington.edu/news/2021/11/08/political-ads-2020-presidential-election-collected-personal-information-spread-misleading-information/

Mitchell AA, Olson JC (1981) Are product attribute beliefs the only mediator of advertising effects on brand attitude? J Mark Res 18(3):318–332

Morucci M, Symington S (2015) The Shy Tory: a credible hypothesis or mediatic oversimplification? https://constitution-unit.com/2015/06/04/the-shy-tory-a-credible-hypothesis-or-mediatic-oversimplification/

Peer E, Rothschild D, Gordon A, Evernden Z, Damer E (2021) Data quality of platforms and panels for online behavioral research. Behav Res Methods 54(4):1643–1662

Petersen MB, Skov M, Serritzlew S, Ramsøy T (2013) Motivated reasoning and political parties: evidence for increased processing in the face of party cues. Political Behav 35(4):831–854

Rossini P, Southern R, Harmer E, Stromer-Galley J (2023) Unleash Britain's Potential (To Go Negative): campaign negativity in the 2017 and 2019 UK general elections on Facebook. Political Stud Rev. https://doi.org/10.1177/14789299231171308

Scammell M, Langer AI (2006) Political advertising: Why is it so boring?. Media Cult Soc 28(5):763–784

Sosnovik V, Goga O (2021) Understanding the complexity of detecting political ads. In: Proceedings of the Web Conference 2021 (WWW 21). Association for Computing Machinery, New York, NY, USA, pp 2002–2013. https://doi.org/10.1145/3442381.3450049

Stafford T, Pirrone A, Croucher M, Krystalli A (2020) Quantifying the benefits of using decision models with response time and accuracy data. Behav Res Methods 52:2142–2155

Taber CS, Lodge M (2006) Motivated skepticism in the evaluation of political beliefs. Am J Political Sci 50(3):755–769

Turow J, Delli Carpini MX, Draper NA, Howard-Williams R (2012) Americans roundly reject tailored political advertising. Annenberg School for Communication, University of Pennsylvania. https://repository.upenn.edu/asc_papers/398

Uberoi E et al. (2020) General Election 2019: results and analysis. https://researchbriefings.files.parliament.uk/documents/CBP-8749/CBP-8749.pdf

Vegetti F, Mancosu M (2020) The impact of political sophistication and motivated reasoning on misinformation. Political Commun 37(5):678–695

Who Targets Me (2024) 'Trends'. https://trends.whotargets.me/countries

Zeng E, Wei M, Gregersen T, Kohno T, Roesner F (2021) Polls, clickbait, and commemorative $2 bills: problematic political advertising on news and media websites around the 2020 US elections. In: Proceedings of the 21st ACM Internet Measurement Conference(IMC' 21). Association for Computing Machinery, New York, NY, USA, p 507–525. https://doi.org/10.1145/3487552.3487850

Zuiderveen Borgesius FJ, Möller J, Kruikemeier S, Fathaigh RÓ, Irion K, Dobber T, Bodo B, De Vreese C (2018) Online political microtargeting: promises and threats for democracy. Utrecht Law Rev 14(1):82–96

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Author contributions

JZ contributed to writing, data analysis and manuscript revision. KD contributed to the theoretical framing and writing. TS contributed to data analysis. All authors were involved in the research design, survey design, conceptual framing and questionnaire development and final manuscript revision.

AI disclosure

ChatGPT was used to assist with grammar proofreading of this manuscript.

Competing interests

The authors declare no competing interests.

Ethical approval

The questionnaire and methodology for this study were approved by the University of Sheffield Research Ethics Committee on 31 January 2022 under the reference number 044534. The authors confirm that all data collection procedures complied with the ethical guidelines of the university.

Informed consent

We used Prolific to recruit potential participants and conducted the survey with a sample size of 1881 on 20 August 2022. The survey was administered online in a click-through format. Given the project's focus on online political advertising, which is connected to debates around political opinions, there was a potential risk of participant distress when responding to questions about political views. To address this, respondents first viewed a 'Participant Information Sheet', which detailed the focus and scope of the research, allowing them to make an informed decision about participation. This was followed by a 'Participant Consent Form'. Only after reading and ticking the appropriate boxes to provide their consent were they able to proceed with the survey. If, for any reason, they no longer wished to continue, they could opt out at any point by closing their browser.

Additional information

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